MATERIAL SAFETY DATA SHEET

NORTH AMERICA INC

SECTION I: PRODUCT IDENTIFICATION

PRODUCT: Cellofoam®
SYNONYMS: Cellofoam® Expanded Polystyrene (EPS)
PRODUCT GRADES: Type I, VIII, II and IX
CHEMICAL FAMILY: Polystyrene Thermoplastic
CAS REGISTRY NO: 9003536
CAS NAME: Ethenylbenzene Homopolymor
FORMULA: $(C_8H_8)_n$
TSCA INVENTORY STATUS: Listed

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HAZARD RATING.
0=Minimal
1=Slight
2=Moderate
3=Serious
4=Severe

HEALTH	0
FIRE	2
REACTIVITY	0

SECTION II: INGREDIENTS

HAZARDOUS COMPONENTS	*CAS REGISTRY NO*:	*APPROX WEIGHT %*
Pentane	109660	1 0% Max
Hologen Flame Retardants	N/A	.9% Max
NON-HAZARDOUS COMPONENTS	*CAS REGISTRY NO*:	*APPROX WEIGHT %*
Polystyrene	9003536	98% Min.

SECTION III: PHYSICAL DATA

FORM: Rigid cellular foam block, boards and shapes
BOILING POINT: N/A
COLOR: White
SPECIFIC GRAVITY (Water = 1) Density 0 6 pcf to 2 0 pcf
EVAPORATION RATE: None
VAPOR DENSITY (Air = 1): N/A
ODOR: Very slight hydrocarbon odor
MELTING POINT: Softens at 175-220 degrees F
VAPOR PRESSURE: N/A
VOLATILES BY VOLUME: <4% (pentane & water)
SOLUBILITY IN WATER: Insoluble

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT AND METHOD USED: 610 degrees F. Min (ASTM D 1929)
SPECIAL FIRE FIGHTING INSTRUCTIONS: Use approved self-contained breathing apparatus respirator and personal protective clothing (Turn out gear).
EXTINGUISHING MEDIA: Water fog, carbon dioxide, dry chemical, foam
AUTOIGNITION TEMPERATURE: 650 DEGREES F., Min.
UNUSUAL FIRE AND EXPLOSION HAZARDS: May produce dense black smoke. Smoke consists of carbon (soot), carbon monoxide, carbon dioxide and water. Dust generated by fabrication, (i.e., sanding, sawing, etc.) will increase fire hazard and should be handled accordingly.

SECTION V: REACTIVITY DATA

STABILITY (CONDITIONS TO AVOID): Stable. Avoid fire and high temperatures.
INCOMPATIBILITY (MATERIALS TO AVOID): Will dissolve in most organic solvents, and some insecticides, aldehydes and amines
HAZARDOUS DECOMPOSITION: Carbon monoxide, carbon dioxide, carbon, water, hydrogen halide.
HAZARDOUS POLYMERIZATION: None

SECTION VI: HEALTH HAZARDS AND FIRST AID

EYE CONTACT: Dust or particles may cause mechanical eye irritation and/or injury.

INHALATION: Dust from mechanical fabrication may cause upper respiratory irritation. Fumes from hot wire cutting can also cause upper respiratory irritation.

SKIN CONTACT: None. May produce slight skin irritation in a few individuals.

INGESTION: Biologically inert. May act as an obstruction if swallowed.

CARCINOGENICITY: None.

SAFETY PRECAUTIONS: Use positive ventilation. Mechanical fabrication, sanding, etc requires the use of safety glasses or goggles and dust mask.

FIRST AID

EYES: Rinse with clean water. Remove foreign particles with clean, lint-free cloth. Obtain medical attention if pain, blinking, tears or redness persist.

INHALATION: If overcome by exposure, remove to fresh air. Provide oxygen and artificial respiration. Get medical attention.

SKIN: Not expected to present skin hazard. Wash exposed areas with mild soap and water. Consult physician if irritation persists.

INGESTION: Not expected to present significant ingestion hazard. Consult physician if swallowed.

SECTION VII: EMPLOYEE PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use approved dust mask when sawing or sanding.

SKIN PROTECTION: None required. Wear gloves and/or sleeves if sensitivity noted.

EYE PROTECTION: Use approved safety glasses/goggles when sawing or sanding.

GENERAL CONTROL MEASURES

Use protective ventilation. Wear safety glasses/goggles and dust mask if mechanical fabrication is to take place.

SECTION VIII: SPILL OR LEAK PROCEDURES

SPILL, LEAK, OR RELEASE PROCEDURES: Normal good housekeeping should be observed. Material can be swept or picked up and placed into a suitable container for disposal.

REPORTABLE QUANTITY: None

DISPOSAL METHOD: Recycle, incinerate (WTE) or land fill, per local and state regulations.

SECTION IX: SPECIAL PRECAUTIONS

STORAGE AND HANDLING: Expanded Polystyrene, although it contains a fire retardant additive, is considered to be combustible and adequate protection from sources of ignition should be taken.

TRANSPORTATION REQUIREMENTS: Not a D O T. "Hazardous Material"

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. *HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS.*

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. *FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.*

Cellofoam EPS Insulation

TECHNICAL DATA

CELLOFOAM EPS Insulation as manufactured by Cellofoam North America Inc is a modified expanded polystyrene. It is a rigid, foamed plastic with resilient closed cells molded in a range of densities and sizes to meet your application specifications/requirements.

CELLOFOAM EPS provides all of the characteristics required for long-term performance -permanent R value, inherent water resistance, excellent physical strength, and dimensional stability.

CELLOFOAM EPS provides a high R value at a comparatively low cost, making it the insulation choice for: Roof Insulation, Perimeter Insulation, Cold Storage Insulation, Exterior Insulation, Wall Systems, Cavity Wall Insulation, Leveling Board, SUPER-SHEATH Sheathing, and Non-Structural Sheathing.

TYPICAL PHYSICAL PROPERTIES OF EPS INSULATION
Specification Reference: ASTM-C578-92

Property		Units	ASTM Test	Type I	Type VIII	Type II	Type IX
Density (Maximum)		pcf		1.0	1.25	1.5	2.0
Density (Minimum)		pcf	C303 or D1622	0 90	1.15	1.35	1 80
Thermal Conductivity	at 40F	BTU/(hr)	C177 or	0.24	0 235	0.22	0 21
K Factor	at 75F	(sq. ft)(F/in)	C518	0 26	0 255	0.24	0.23
Thermal Resistance	at 40F	per inch	—	4 17	4.25	4 55	4 76
Values (R)*	at 75F	thickness	—	3.85	3.92	4.17	4.35
Strength Properties							
Compressive 10% Deformation		psi	D1621	10-14	13-18	15-21	25-33
Flexural		psi	C203	25-30	30-38	40-50	55-75
Tensile		psi	D1623	16-20	17-21	18-22	23-27
Shear		psi	D732	18-22	23-25	26-32	33-37
Shear Modulus		psi	—	280-320	370-410	460-500	600-640
Modulus of Elasticity		psi	—	180-220	250-310	320-380	460-500
Moisture Resistance							
WVT		perm in.	E96	2.0-5.0	1.5-3.5	1 0-3 5	0.6-2 0
Absorption (vol.)		%	C272	less than 4 0	less than 3 0	less than 3 0	less than 2 0
Capillarity		—	—	none	none	none	none
Coefficient of Thermal Expansion		in./(in)(F)	D696	0 000035	0.000035	0.000035	0 000035
Maximum Service Temperature		°F	—				
Long-term				167	167	167	167
Intermittent				180	180	180	180
Oxygen Index		Minimum %	D2863	24.0	24 0	24 0	24 0
Dimensional Stability		% Change	D2126	max 2.0	max 2.0	max 2.0	max. 2.0
Bond Strength, lb/ft² shear							
with Portland Cement				830	830	830	830
with gypsum				510	510	510	510
Sound Absorption			C423				
at 1000 cps				0.36	0.36	0.36	0 36
at 2000 cps				0 54	0.54	0 54	0.54
at 4000 cps				0.38	0 38	0 38	0 38
Buoyancy, lb/ft³				60	60	60	60
Toxicity			Laboratory Reports	Approximately the same as burning wood, paper or cardboard.			
Fungus & Bacterial Resistance			F H A. Test Procedures	Will not support bacterial or fungus growth, no food value			

*'R' means resistance to heat flow The higher the 'R' value, the greater the insulating power

Advantages

- Available in a wide range of sizes
- Low material and insulation costs
- Can be obtained in various densities
- Easy to handle and apply
- Simple to cut and shape with common tools
- Restricts moisture penetration
- Clean, odorless, non-irritating skin
- Excellent bond with drywall and non-solvent type adhesives
- Provides an excellent surface for laminate base

Characteristics

- Effective over wide temperature range
- Low thermal conductivity
- High strength to weight ratio
- Reflective white color
- Does not support bacterial growth
- Resistant to most acids and alkalis

All EPS insulation products manufactured by Cellofoam North America Inc meet applicable standards including:

- ASTM C578-92 (formerly HH-I-524C)
- HUD/FHA Use of Material, Bulletin #71
- ICBO
- BOCA
- SBCCI
- Underwriters Laboratories
- Military Spec. MILP-19644C
- Military Spec. MILP-40619A
- Factory Mutual

EPS EXPANDED POLYSTYRENE INSULATION

MEMBER INTERNATIONAL ASSOCIATION OF COLD STORAGE CONTRACTORS

ALUMINUM ASSOCIATION OF FLORIDA INC. AAF

NATIONAL ROOFING CONTRACTORS ASSOCIATION

MRCA MIDWEST ROOFING CONTRACTORS ASSOCIATION INC

Factory Mutual System Approved

eima

NMMA National Marine Manufacturers Association

WARNING: This product is combustible and if exposed to a fire of sufficient heat and intensity may burn rapidly It should not be left exposed or inadequately protected Consult specific instructions for use accompanying this product

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